

Introduction

QDI P2S Mainboard integrate ATA RAID to provide a cost-effective, high performance RAID function that adds performance and/or reliability to PC desktops and/or servers using Ultra ATA/100, Ultra ATA/66, or EIDE drives.

P2S Mainboard onboard ATA RAID supports striping (RAID 0) or mirroring (RAID 1) for master only.

With striping, identical drives can read and write data in parallel to increase performance. Mirroring increases read performance through load balancing and elevator sorting while creating a complete backup of your files.

ATA RAID array can double the sustained data transfer rate of Ultra ATA/100 drives. ATA RAID fully supports Ultra ATA/100 specification of up to 100 MB/sec per drive, depending on individual drive specifications.

P2S Mainboard onboard ATA RAID also offers fault tolerant, data redundancy for entry-level network file servers or simply for desktop PC users wanting to continually protect valuable data on their PC. P2S Mainboard onboard ATA RAID offers RAID 1 mirroring (for two drives) to protect data. Should a drive that is part of a mirrored array fail, P2S Mainboard onboard ATA RAID uses the mirrored drive (which contains identical data) to assume all data handling. When a new replacement drive is later installed, P2S Mainboard onboard ATA RAID rebuilds data to the new drive from the mirrored drive to restore fault tolerance.

P2S Mainboard onboard ATA RAID's bootable BIOS supports individual drives larger than 8.4GB. With FAT32 and NTFS partitioning, the array can be addressed as one large single volume.

Supports System:

- For Windows 2000
- For Windows 95/98
- For Windows NT4.0
- For Windows 3.1/DOS

Installing Drivers of RAID

This section details the P2S Mainboard onboard ATA RAID driver installation when used with various operating systems. The software includes the driver necessary to identify ATA RAID to the operating system.

Windows 2000

Installing Driver During New Windows 2000 Installation

- 1a. Floppy Install: Boot the computer with the Windows 2000 installation diskettes.
- 1b. Floppyless Install: Boot from floppy and type "WINNT". After files have been copied, the system will reboot. On the reboot, press <F6> after the message "Setup is inspecting your computer's hardware configuration..." appears.
- 1c. CD-ROM Install: Boot from the CD-ROM. Press <F6> after the message "Press F6 if you need to install third party SCSI or RAID driver" appears.
2. When the "Windows 2000 Setup" window is generated, press "S" to Specify an Additional Device(s)
3. Press "O" to select "Other" and press the "Enter" key.
4. Insert the Promise Technology driver diskette into drive A: and press "Enter" key.
5. Choose "Win2000 Promise FastTrak100-Lite Controller" from the list that appears on screen, then press the "Enter" key.
6. The Windows 2000 Setup screen will appear again saying "Setup will load support for the following mass storage devices:" The list will include "Win2000 Promise FastTrak100-Lite controller"..
NOTE: If you need to specify any additional devices to be installed, do so at this time. Once all devices are specified, continue to step 7.
7. From the Windows 2000 Setup screen, press the Enter key. Setup will now load all device files and then continue the Windows 2000 installation.

Installing Driver in Existing Windows 2000 System

WARNING: If you will be moving the boot drive containing the existing Windows 2000 operating system to a mirrored RAID 1 array to the P2S Mainboard RAID connector, the RAID driver **MUST** be loaded to the hard drive while it is still attached to your existing hard drive controller. Do not attach this drive or any other hard drive to the RAID connector before completing this step.

After enabling the ATA RAID on Mainboard and rebooting your system, Windows 2000 setup will show a "New Hardware Found" dialog box. Under Windows 2000, the "PCI RAID Controller" will be displayed.

1. In the dialog box, choose "Driver from disk provided by hardware manufacturer" button.
2. In the A: drive, insert the ATA RAID driver diskette.
3. Type "A:\WIN2000" in the text box. Press "Enter".
4. Choose "Win2000 Promise FastTrak100-Lite Controller" from the list that appears on screen, then press the "Enter" key.
5. The Windows 2000 Setup screen will appear again saying "Setup will load support for the following mass storage devices – Win2000 Promise FastTrak100-Lite controller". The RAID driver will now be copied on to the system and entered into the Windows 2000 driver database.
6. When the "System Settings Change" dialog box appears, remove the floppy diskette and click on "Yes" to restart the system. Windows 2000 will then restart for the driver installation to take effect.
7. Power off your system, then attach your hard drives to the RAID connector.

Confirming Windows 2000 Installation

1. From Windows 2000, open the Control Panel from "My Computer" followed by the System icon.
2. Choose the "Hardware" tab, then click the "Device Manager" tab.
3. Click the "+" in front of "SCSI & RAID Controllers hardware type." The driver "Win2000 Promise FastTrak/FastTrak100-Lite Controller" should appear.

Windows 95/98

Installing Drivers During Windows 95/98 Installation

The following three sections detail the installation of the ATA RAID drivers while installing Windows 95/98 (with the ATA RAID on mainboard already in place). If you're installing the ATA RAID drivers on a system with Windows 95/98 already installed, see "Installing Drivers with Existing Windows 95/98" .

Windows 98

1. After enabling the ATA RAID on mainboard and configuring the hard drive(s), partition and format your hard drive(s), if necessary.
2. Install Windows 98 normally.
3. After installation, go the "Start" menu and choose "Settings."
4. From the "Settings" menu, choose "Control Panel."
5. In the "Control Panel" window, double-click on the "System" icon.
6. In the "System" window, choose the "Device Manager" tab.
7. In the hierarchical display under "Other Devices" is a listing for "PCI RAID Controller." Choose it and then press the "Properties" button.
8. Choose the "Driver" tab in the "Properties" window, choose "Update Driver," and then press "Next."
9. Choose "Search for a better driver than the one your device is using now (recommended)," then press "Next."
10. Choose "Specify Location," and then type "A:\WIN95-98" in the text box.
11. Insert the "ATA RAID Driver" diskette into the A: drive.
12. Press the "Next" button. A message informing you that Windows 98 has found "Win95-98 Promise FastTrak100-Lite (tm) Controller" should appear.
13. Press "Next," then "Finish," then "Yes" when asked if you want to restart your computer. Be sure to remove the diskette from drive A:.

Windows 95

1. After enabling the ATA RAID on mainboard and configuring the hard drives, partition and format your hard drive(s), if necessary.
2. Install Windows 95 normally.
3. After installation, go to the "Start" menu and choose "Settings."
4. From the "Settings" menu, choose "Control Panel."
5. In the "Control Panel" window, double-click on the "System" icon.
6. In the "System" window, choose the "Device Manager" tab.
7. In the hierarchical display under "Other Devices" is a listing for "PCI Mass Storage Controller." Choose it and then press the "Properties" button.
8. Choose the "Driver" tab in the "Properties" window, and then press the "Update Driver" button.
9. When asked if you want Windows to search for the driver, choose "Yes (recommended)."
10. Insert the "ATA RAID Driver" diskette into the A: drive, then press "Next."
11. When Windows informs you that it was unable to find the drivers, press "Other Locations..."
12. In the "Select Other Location" dialog box, type "A:\WIN95-98".
13. Press the "Next" button. A message informing you that Windows 95 has found "Win95-98 Promise FastTrak100-Lite (tm) Controller" should appear.
14. Press "Finish." (If Windows can't find the "FastTrak100-Lite.MPD" file, type "A:\WIN95-98" in the "Copy files from:" text box).
15. Choose "Yes" when asked if you wish to restart the system, and remove the diskette.

Installing Drivers with Existing Windows 95/98

The following three sections detail the installation of ATA RAID drivers on a system that has Windows 95/98 already installed. If you're installing the ATA RAID drivers on a system during a Windows 95/98 installation, see "Installing Drivers During Windows 95/98 Installation".

Windows 98

1. After enabling the ATA RAID on motherboard and configuring the hard drives, power up the system and boot Windows.
2. The "Add New Hardware Wizard" will appear, informing you that it has found a "PCI RAID Controller."
3. Check the "Search for the best driver for your device" box and click the Next button.
4. Check the "Specify a Location" box and click Next button.
5. Type "A:\WIN95-98" in the text box that appears.
6. Insert the "ATA RAID Driver" diskette in drive A:.
7. Click on "Next." The Add New Hardware wizard will say it has found "Win95-98 Promise FastTrak100-Lite controller".
8. Click on "Next," and then on "Finish."
9. Choose "Yes" when asked if you want to restart your computer. Be

Windows 95

1. After enabling the ATA RAID on motherboard and configuring the hard drives, power up the system and boot Windows.
2. The "Update Device Drive Wizard" will appear, informing you that it has found a "PCI Mass Storage Controller."
3. Insert the "ATA RAID Driver" diskette in drive A:.
4. Type "A:\WIN95-98" in the text box, then click on "Next." Windows will inform you that it has found the "Win95-98 Promise FastTrak100-Lite controller".
5. Click on "Finish," and when prompted to insert the "ATA RAID Driver" diskette, click on "OK."

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6. If a message informing you that the file "FastTrak100-Lite.MPD" cannot be found, go to the "Copy files from:" text box and type: "A:\WIN95-98".
7. Choose "Yes" when asked whether you want to start your computer. Be sure to remove the diskette from drive A

Confirming Driver Installation in Windows 98/95

To confirm that the driver has been properly loaded in Win 95/98, perform the following steps:

1. Choose "Settings" from the "Start" menu.
2. Choose "Control Panel," and then double-click on the "System" icon.
3. Choose the "Device Manager" tab, and then click the "+" in front of "SCSI & RAID controllers." "Win95-98 Promise FastTrak100-Lite controller" should appear

DOS/Windows 3.1x

For first-time installation, follow the standard procedure of installing DOS on to your hard disk (partition all hard drives with FDISK and format before performing the following procedure):

1. Insert "Disk 1" of your DOS installation diskettes into drive A:.
2. Type "A:SETUP" at the "A:\>" prompt.
3. Continue with normal DOS installation procedure, and refer to your DOS manual for additional details.

NOTE: The P2S mainboard integrated RAID supports both DOS and Windows 3.1x without software drivers.

Windows NT4.0

Installing Drivers During Windows NT 4.0 Installation

1. Start the system installation by booting from the Windows NT disk:
 - a) Floppy install: boot the system with the Windows NT installation diskettes.
 - b) Floppyless install: boot from floppy and type "WINNT /B". After files have been copied, the system will reboot. On the reboot, press the "F6" key when the message "Setup is inspecting your computer's hardware configuration..." appears.
 - c) CD-ROM disk install: boot from the CD-ROM disk and press the "F6" key when the message "Setup is inspecting your computer's hardware configuration..." appears.
2. When the "Windows NT Setup" window is generated, press "S" to Specify an Additional Device(s).
3. Press "O" to select "Other" and press the "Enter" key.
4. Insert the ATA RAID driver diskette into drive A: and press the "Enter" key.
5. Choose "Win NT Promise FastTrak100-Lite (tm) Controller" from the list that appears on screen, then press the "Enter" key.
6. The Windows NT Setup screen will appear again saying "Setup will load support for the following mass storage devices:" The list will include "Win NT Promise FastTrak100-Lite (tm) controller".

NOTE: If you need to specify any additional devices to be installed, do so at this time. Once all devices are specified, continue to step 7.
7. From the Windows NT Setup screen, press the Enter key. Setup will now load all device files and then continue the Windows NT installation.
2. After a successful installation, the "SCSI Adapter Setup" box will show that the "Win NT Promise FastTrak100-Lite (tm) Controller" driver has been installed.

Installing Driver with Existing Windows NT 4.0

WARNING: If you plan to move your boot drive to a mirrored RAID 1 array, hard drives should NOT be connected to the ATA RAID connector before performing the following procedure. The ATA RAID drivers must be loaded on the system hard drive (running under the existing hard drive controller) before any hard drives are connected to the ATA RAID connector.

1. Choose "Settings" from the "Start" menu.
2. Choose "Control Panel" from the "Settings" menu.
3. Double-click on the "SCSI Adapters" icon, which generates the "SCSI Adapters" dialog box.
4. Choose "Drivers," and then press "Add."
5. In the "Install Drivers" dialog box, press "Have Disk..."
6. When the "Install From Disk" appears, insert the "ATA RAID Driver" diskette in drive A:.
7. Type "A:\NT4" in the text box window, then choose "OK."
8. When the "Install Driver" dialog box appears, select "Win NT Promise FastTrak100-Lite Controller" and then press "OK."
9. When the "Select SCSI Adapter Option" dialog box appears, press "Install."
10. After a successful installation, the "SCSI Adapter Setup" box will show that the "Win NT Promise FastTrak100-Lite Controller" has been installed.
11. Power off your system.
12. If moving the boot drive to the ATA RAID connector, now attach the hard drives otherwise reboot.

Removing the Driver from Windows NT 4.x

1. In "Start" Button choose "Control Panel" in "Setup" group.
2. In "Control Panel," select "SCSI Adapter," next choose "Drivers" label
3. Choose "Remove" button.
4. After successful removing, the "SCSI Adapter Setup" box will show that

Using FastBuild Configuration Utility

The FastBuild Configuration Utility offers several menu choices to create and manage the drive array on the mainboard ATA RAID. For purposes of this manual, it is assumed you have already created an array in the previous chapter and now wish to make a change to the array or view other options.

Viewing ATA RAID BIOS Screen

When you boot your system with the onboard ATA RAID enabled and drives installed, the mainboard integrated RAID will detect the drives attached and show the following screen.

```
FastTrak100-Lite (tm) BIOS Version 1.xx (Build xx)
(c) 1995-2000 Promise Technology, Inc. All Rights Reserved.

Scanning IDE drives . . . . .
```

If an array exists already, the BIOS will display the following screen showing the card's BIOS version and status of the array.

```
FastTrak100-Lite (tm) BIOS Version 1.xx (Build xxxx)
(c) 1995-2000 Promise Technology, Inc. All Rights Reserved.

ID      MODE      SIZE  TRACK-MAPPING  STATUS
1 *    2+0 Stripe  16126M  611/128/32     Functional

Press <Ctrl-F> to enter FastBuild (tm) Utility....
```

The array status consists of three possible conditions: Functional, Critical, Offline.

Functional - The array is operational.

Critical - A mirrored array contains a drive that has failed or disconnected. The remaining drive member in the array is functional. However, the array has temporarily lost its ability to provide fault tolerance. The user should identify the failed drive through the FastBuild Setup utility, and then replace the problem drive.

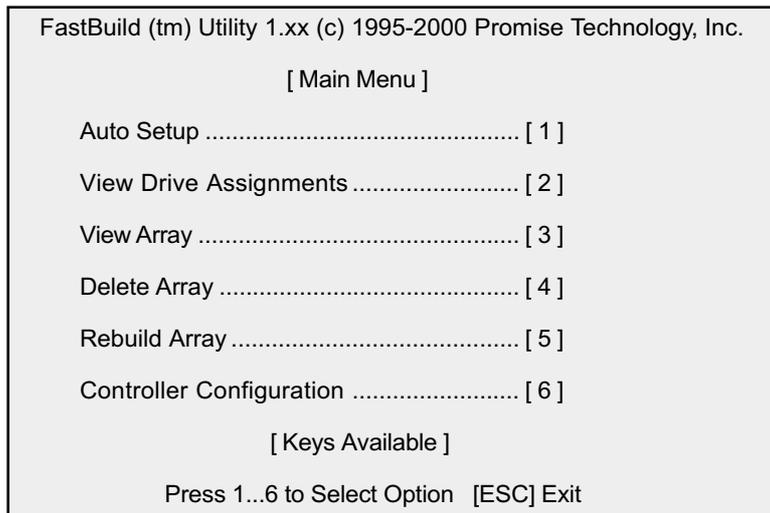
Offline - A striped array has 1 drive that has failed or been disconnected. When the array condition is "offline," the user must replace the failed drive(s), then restore data from a backup source.

Navigating the FastBuild Setup Menu

When using the menus, these are some of the basic navigation tips: Arrow keys highlights through choices; [Space] bar key allows to cycle through options; [Enter] key selects an option; [ESC] key is used to abort or exit the current menu.

Using the Main Menu

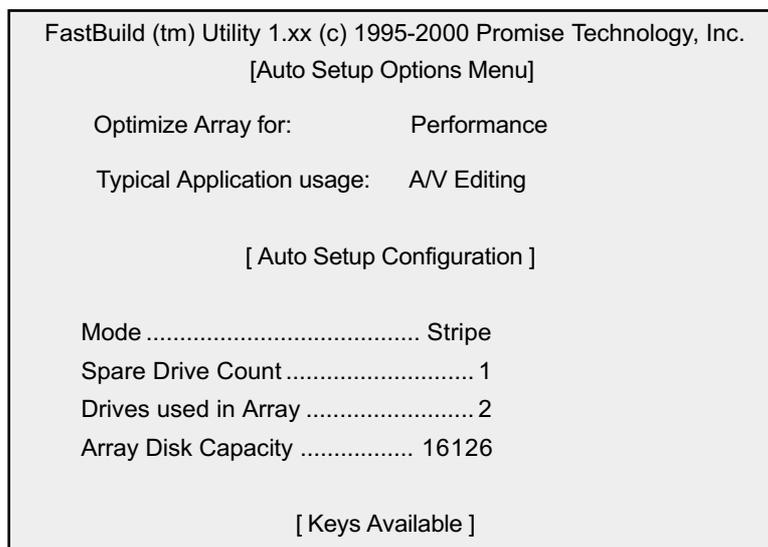
This is the first option screen when entering the FastBuild Setup.



NOTE: After configuring an array using FastBuild, you should FDISK and format the arrayed drive(s) if you are using new, blank drives. Depending on the type of array you are using.

Creating Arrays Automatically

The Auto Setup <1> selection from the Main Menu can intuitively help create your disk array. It will assign all available drives appropriate for the disk array you are creating. After making all selections, use Ctrl-Y to Save selections. FastBuild will automatically build the array.



Optimize Array For

Select whether you want Performance (RAID 0), Security (RAID 1) under the "Optimize Array for" setting.

Performance (RAID 0 Striping)

Supports the maximum performance. The storage capacity equals the number of drives times the capacity of the smallest drive in the disk array.

Security (RAID 1 Mirroring)

Creates a mirrored (or fault tolerant) array for data security.

NOTE: Under the Security setting, mainboard ATA RAID permits two drives to be used for a single Mirrored array only.

Defining Typical Application Usage

Allows the user to choose the type of PC usage that will be performed in order to optimize how ATA RAID handles data blocks to enhance performance. Your choice will determine the block size used. You may choose from: A/V Editing (for audio/video applications, or any similar application that requires large file transfers), Server (for numerous small file transfers), or Desktop (a combination of large and small file sizes).

NOTE: If you wish to customize the settings of individual disk arrays (such as block size), you must manually create disk arrays with the Define Array <3> option from the Main Menu.

Viewing Drive Assignments

The View Drive Assignments <2> option in the Main Menu displays whether drives are assigned to a disk arrays or are unassigned.

Under the "Assignment" column, drives are labeled with their assigned disk array or shown as "Free" if unassigned. Such "Free" drives can be used for a future array or used as a spare drive when a drive fails in a mirrored array. Unassigned drives are not accessible by the OS. The menu also displays the data transfer mode that relates to speed used by each drive (U5 refers to 100MB/sec transfers, U4 refers to 66MB/sec transfers, etc...)

FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.					
[View Drive Assignments]					
Channel:ID	Drive Model	Capacity(MB)	Assignment	Mode	
1 : Master	QUANTUMCR8.4A	8063	Array 1	U5	
1 : Slave	QUANTUMCR8.4A	8063	Free	U5	
2 : Master	QUANTUMCR8.4A	8063	Array 1	U5	
[Keys Available]					
[↑] Up [↓] Down [ESC] Exit Mode (U=UDMA, P=PIO, D=DMA)					

Manually Creating an Array

The Define Array <3> option from the Main Menu allows users to begin the process of manually defining the drive elements and RAID levels for one or multiple disk arrays attached to ATA RAID connector. Users will commonly create one or two drive arrays, though the card will support a maximum of four arrays¹.

NOTE: For most installations, we recommends the <1> Auto Setup for easy disk array creation.

FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.				
[Define Array Menu]				
Array No	RAID Mode	Total Drv	Capacity(MB)	Status
Array 1	Stripe	2	16126	Functional
Array 2	—	—	—	—
Array 3	—	—	—	—
Array 4	—	—	—	—
[Keys Available]				
Note: * — Bootable Array				
[↑] Up [↓] Down [ESC] Exit [Enter] Select [Space] Change Boot Drive				

1. To manually create an array from the Define Array Menu, use the arrow keys to highlight the array number you wish to define, and press [Enter] to select.
2. The Define Array Definition Menu will next appear that allows drive assignments to the disk array (see next page).

Selecting Array Type

1. Under the Definition section of this menu, highlight the Array # for which you want to assign a RAID level.
2. Use the [Space] key to cycle through three array types: Performance (RAID 0 Striping), Security (RAID 1 Mirroring, RAID 0+1 Striping/Mirroring (for 4 drives), or Capacity (Spanning). See page 57 about RAID levels.

```

FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.

[ Define Array Definition Menu ]

Array No  RAID Mode  Total Drv  Capacity(MB)  Status
Array 1    Stripe      2          16126          Functional

Stripe Block: 64 KB

[ Drive Assignments ]

Channel:ID  Drive Model      Capacity (MB)  Assignment
1 : Master   QUANTUMCR8.4A    8063             Y
1 : Slave    QUANTUMCR8.4A    8063             N
2 : Master   QUANTUMCR8.4A    8063             Y

[ Keys Available ]

[↑] Up [↓] Down [ESC] Exit [Space] Select [Ctrl-Y] Save
    
```

Selecting Stripe Block

For RAID 0 Striped arrays only, you may manually select the “stripe block size.” Use the Spacebar to scroll through choices progressing as follows (1, 2, 4, 8 , 16 . . . 1024).

The size selected affects how ATA RAID sends and retrieves data blocks from the drives. You will need to perform your own testing to determine how the data block size is affecting your particular use of the array. In general, a larger block size is better when handling large data transfers (such as in A/V editing or graphics) while a smaller block size is better when handling e-mail and other common server data. The default is 64K.

Assigning Drive(s) to Array

1. Under the [Drive Assignments] section, highlight a drive using the [↑] Up [↓] keys.
2. With the [Space] bar key, change the Assignable option to “Y” to add the drive to the disk array.
3. Press <Ctrl-Y> to save the disk array information. Depending on the array type selected, the following scenarios will take place:
 - a) If choosing a Striping, Spanning, or Mirroring/Striping array, the initial Define Array Menu screen will appear with the arrays defined. From there you may ESC to exit and return to the Main Menu of FastBuild.
 - b) If you selected a Mirroring array for two drives, there is an additional window that appears as described in order to create the array. To do this you will use either two brand new drives, or one drive that contains existing data that you wish to mirror.

Creating A Mirrored Array Using New Drives

As described in the Drive Assignments Option section above, if you selected a mirroring array and wish to use two new assigned drives, follow the directions here.

1. After assigning new drives to a Mirroring array and saving the information with <Ctrl-Y>, the window below will appear.

Do you want the disk image to be duplicated to another? (Yes/No)
Y - Create and Duplicate
N - Create Only

2. Press “N” for the Create Only option.
3. A window will appear almost immediately confirming that your Security array has been created. Press any key to reboot the system

Array has been created.
<Press Any Key to Reboot>

Adding Fault Tolerance to an Existing Drive

P2S Mainboard integrated ATA RAID will create a mirrored array using an existing system drive with data. You must assign the existing drive and another drive of same or larger capacity to the Mirroring array. The BIOS will send the existing data to the new blank drive.

1. After assigning the drives to a Mirroring array, press <Ctrl-Y> keys to Save your selection. The window below will appear.

Do you want the disk image to be duplicated to another? (Yes/No)
Y - Create and Duplicate
N - Create Only

2. Press "Y" for the Create and Duplicate option. The window below will appear asking you to select the Source drive to use. FastBuild will copy all data from the Source drive to the Target drive.

Source Disk		
Channel:ID	Drive Model	Capacity (MB)
Target Disk		
Channel:ID	Drive Model	Capacity (MB)
[Please Select A Source Disk]		
Channel:ID	Drive Model	Capacity (MB)
1 :Master	QUANTUMCR8.4A	8063
2 :Master	QUANTUMCR8.4A	8063

[↑] Up [↓] [ESC] Exit [Ctrl-Y] Save

3. Use the arrow keys to choose which drive contains the existing data to be copied.
4. Press [Ctrl-Y] keys to Save selection and start duplication. The following confirmation screen will appear.

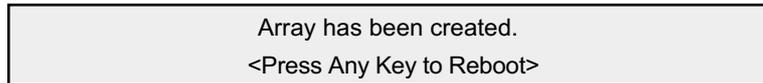
Start to duplicate the image . . .
Do you want to continue? (Yes/No)
Y - Continue N - Abort

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5. Select "Y" to continue. If you choose "N", you will be returned to step 1.
6. Once "Y" is selected, the following progress screen will appear. The process will take a few minutes.

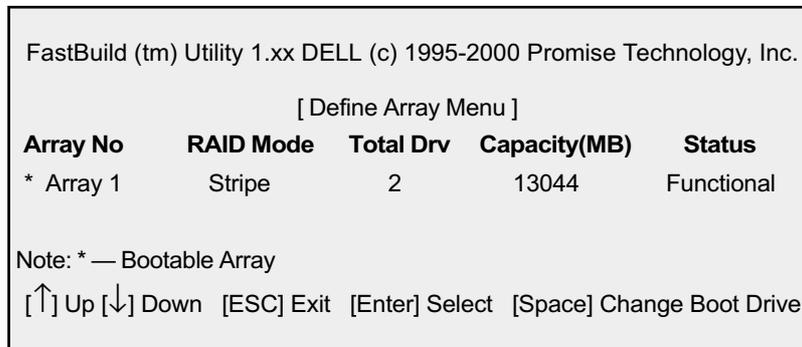


7. Once mirroring is complete, the following screen will appear confirming that your Security array has been created. Press any key to reboot the system



Making a FastTrak100-Lite Disk Array Bootable

1. Once you have returned to the Define Array Menu window (below), you will see the array(s) you have created. You now may use the menu to select which previously-defined array will be used as the bootable array.



2. Highlight the array which you want to boot from using the [↑] Up [↓] Down keys.
3. Press the [Space] bar key.
4. An * asterisk will appear next to the array number indicating it as bootable. The system will now recognize this array as the first array seen
5. The system will then use this bootable array as the (fixed) boot C: drive.

NOTE: The bootable array must contain your configured operating system.

Creating a “Hot” Spare Drive for Mirrored Arrays

For automatic rebuilds of a mirrored array, attach an extra “spare” drive to the ATA RAID connector. Drives that are not assigned to an array and are the same size or larger than the original will be used for the automatic rebuild. This is performed in the background under all supported operating systems, except DOS. At a later time, the system can be turned off and the failed drive can be physically removed.

How ATA RAID Orders Arrays

During startup, the disk arrays on the ATA RAID are recognized in this order: 1) The array set to bootable in the FastBuild Setup, and 2) the Array number (i.e. Array 0, Array 1...) This would be involved in determining which drive letters will be assigned to each disk array.

How ATA RAID Saves Array Information

All disk array data is saved into the reserved sector on each array member. Promise suggests that users record their disk array information for future reference.

Another feature of the ATA RAID disk array system is to recognize drive members even if drives are moved between different ATA RAID card connectors. Since each drive’s array data identifies itself to the array, it is possible to move or swap drives without modifying the array setup. This is valuable when adding drives, or during a rebuild.

Deleting An Array

The Delete Array <4> Menu option allows for deletion of disk array assignments. This is not the same as deleting data from the drives themselves. If you delete an array by accident (and before it has been used again), the array can normally be recovered by defining the array identically as the deleted array.

WARNING: Deleting an existing disk array could result in its data loss. Make sure to record all array information including the array type, the disk members, and stripe block size in case you wish to undo a deletion.

FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.				
[Delete Array Menu]				
Array No	RAID Mode	Total Drv	Capacity(MB)	Status
Array 1	Stripe	2	16126	Functional
Array 2	---	---	---	---
Array 3	---	---	---	---
Array 4	---	---	---	---
[Keys Available]				
[↑] Up [↓] Down [ESC] Exit [Del] Delete				

1. To delete an array, highlight the Array you wish to delete and press the [Del] key.
2. The View Array Definition menu will appear (see below) showing which drives are assigned to this array.

FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.				
[Define Array Menu]				
Array No	RAID Mode	Total Drv	Capacity(MB)	Status
Array 1	---	---	---	---
Stripe Block: 64 KB				
[Drive Assignments]				
Channel:ID	Drive Model	Capacity (MB)	Assignment	
1 : Master	QUANTUMCR8.4A	8063	Y	
2 : Master	QUANTUMCR8.4A	8063	Y	

3. Confirm yes to the following warning message with the <Ctrl-Y> key to continue array deletion:

Are you sure you want to delete this array?
Press Ctrl-Y to Delete, others to Abort

4. After deleting the array, you should create a new array using Auto Setup or the Define Array menu from the FastBuild Main Menu.

Rebuilding A Mirrored Array

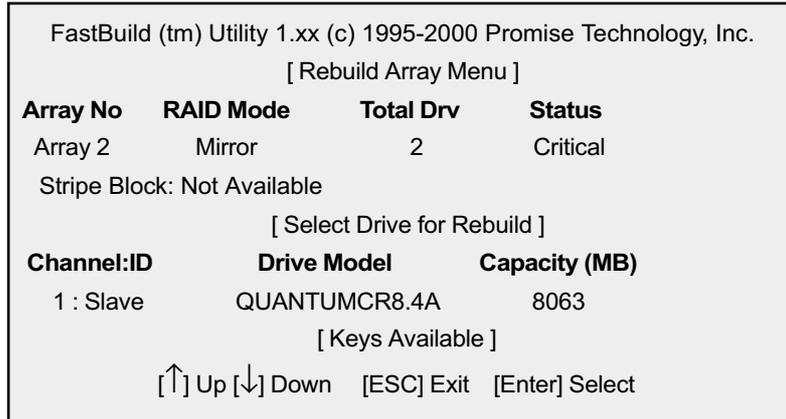
The Rebuild Array <5> Menu option is necessary to recover from an error in a mirrored disk array. You will receive an error message when booting your system from the BIOS.

Follow these steps BEFORE using the Rebuild Array menu option:

1. On bootup, the ATA RAID Startup BIOS will display an error message identifying which drive has failed.
2. Press <Ctrl-F> keys to enter FastBuild Main Menu.
3. Select submenu Define Array <3>.
4. Select the failed array and identify the Channel and ID of the failed drive.
5. Power off and physically remove the failed drive.
6. Replace the drive with an identical model.
7. Reboot the system and enter the FastBuild Main Menu.
8. Select the <5> Rebuild Array option. The following screen will appear.

```
FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.
[ Rebuild Array Menu ]
Array No  RAID Mode  Total Drv  Capacity(MB)  Status
Array 1    Mirror        2           16126           Critical
Array 2    _____
Array 3    _____
Array 4    _____
[ Keys Available ]
[↑] Up [↓] Down [ESC] Exit [Enter] Select
```

- 9 Highlight the array whose Status is "Critical".
10. Press [Enter]. The following screen will then appear (see next page).



11. Under [Select Drive for Rebuild], highlight the replacement drive.
12. Press [Enter] and confirm that the data will be copied on to the selected drive. All data on the replacement drive will be written over with mirrored information from the array drive. A progress bar will appear as below.



13. Once the rebuild process is complete, the user will be asked to reboot the system.

Viewing Controller Settings

The Controller Configuration <6> menu selection allows you to enable or disable the ATA RAID BIOS from halting (the default) if it detects an error on boot up. You may also view the system resources (Interrupt and I/O port address) of ATA RAID's data channels.

```
FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.
      [ Adapter Configuration - Options ]
      Halt On Error:          Enable
      [ System Resources Configuration ]
Channel 1 (IDE1)           Interrupt : A           I/O Port : FFF0
Channel 2 (IDE2)           Interrupt : A           I/O Port : FFA8
      [ Keys Available ]
      [←, →, Space] Change Option [ESC] Exit
```

Halting ATA RAID BIOS On Bootup Errors

The [Adapter Configuration – Options] section allows you to enable or disable ATA RAID to Halt operation at the BIOS startup screen should an error be detected. This is the only option that can be changed on this screen.